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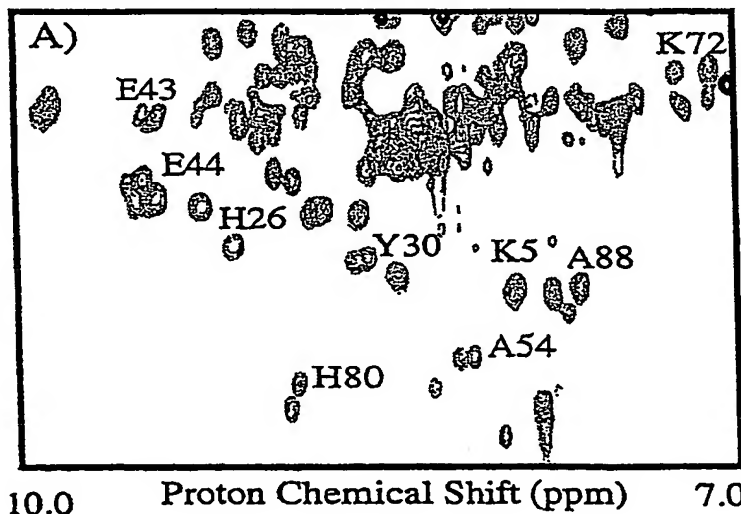
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(54) Title: **NOVEL COMPOUNDS FOR THE TREATMENT OF SICKLE CELL DISEASE**

### Cytochrome b<sub>5</sub> Hemoglobin Complex (2:1)



(57) Abstract: Compounds have been designed to inhibit the action of cytochrome b<sub>5</sub> in the physiological re-reduction of auto-oxidized hemoglobin (methemoglobin), for the purpose of increasing methemoglobin levels in the blood of patients as a treatment for sickle cell disease. Administration of the compounds mimics congenital deficiencies in cytochrome b<sub>5</sub>, in which methemoglobin levels rise as high as 50% of total hemoglobin and derivatives in the blood, without adverse clinical manifestations. Methemoglobin inhibits red cell sickling and high levels of methemoglobin in the blood induced by the compounds of this invention prevent the symptoms of sickle cell disease.